Remarks

Claim Rejections Under 35 USC 103

Claims 15, 18-34 and 36-45 are rejected under 35 USC 103(a) as being unpatentable over Sawahata in view of Todokoro.

Valid rejection under 35 USC 103(a) requires evidence of a suggestion or motivation for one skilled in the art to combine prior art references to produce the claimed invention. US Court of Appeals for the Federal Circuit (*Ecolochem inc. v Southern California Edison Co., Fed. Cir.*, No. 99/1043, 9/7/00).

The best defense against hindsight-based obviousness analysis is the rigorous application of the requirement for showing a teaching or motivation to combine the prior art references, according to the court.

Sawahata and Todokoro do not motivate or suggest to one skilled in the art to combine these references to produce Applicant's claimed invention.

Court of Appeals for the Federal Circuit confirmed the above principles in In Re Sang-Su Lee (00-1158). The court analyzed 35 USC 103 requirements starting from the Administrative Procedure Act and held (citations omitted):

> "Tribunals of the PTO are governed by the Administrative Procedure Act, and their rulings receive the same judicial deference as do tribunals of other administrative agencies.
>
> "The Administrative Procedure Act, which governs the proceedings of administrative agencies and related judicial review, establishes a scheme of "reasoned decision making." Not only must an agency's decreed result be within the scope of its lawful authority, but the process by which it reaches that result must be logical and rational.

"As applied to the determination of patentability vel non when the issue is obviousness, it is fundamental that rejections under 35 USC §103 must be based on evidence comprehended by the language of that section. (Emphasis added). When patentability turns on the question of obviousness, the search for and analysis of the prior art includes evidence relevant to the finding of whether there is a teaching, motivation, or suggestion to select and combine the references relied on as evidence of obviousness. (Emphasis added)

"The factual inquiry whether to combine references must be thorough and searching. It must be based on objective evidence of record. This precedent has been reinforced in myriad decisions, and cannot be dispensed with. Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. There must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the Applicant. Teachings of references can be combined only if there is some suggestion or incentive to do so."

As stated above, **Sawahata and Todokoro do not motivate or suggest to a person skilled in the art to combine these references to duplicate the claims of the present invention.**

New claim 46 replaces pending claim 15, and new claim 47 replaces claim 33.

Dependent claims 16-19, 21, 24, 25, 32, 35, 36 and 37 are cancelled.

Claim 20 is amended to depend from new claim 46.

Claims 22, 26, 27 and 30 are amended to depend from claim 20.

Claims 34 and 38-45 are amended to depend from new claim 47.

New independent claim 46 has been re-drafted to comprise additional features from a number of earlier dependent claims. New claim 46 includes the features that the target structure has a near axis region and a region remote from the optical axis defined by the particle beam apparatus where the region remote from the optical axis is off-set in the direction of the optical axis from the near axis region and the electron detector has a positive electrostatic potential generating a strongly localized field at the near axis region of the target structure so that on the conversion electrons emitted from the near axis region are extracted by the localized field towards the electron detector system. However, conversion electrons emitted in other regions of the target structure are not extracted towards the electron detector system.

By the above features the detector system of the present invention as claimed provides the possibility and ensures that only such electrons or charged particles emitted by the sample due to irradiation by a primary particle beam will generate detected conversion electrons which are caused by the deflecting system to impinge on the near axis region of the target structure.

As described in the disclosure of the present patent application, by this combination of features it is possible to select between the detection of secondary electrons emitted by the sample and backscattered electrons emitted by the sample.

By the amended features, the claimed invention considerably differentiates over the prior art according to Sawahata, in which (as is clearly disclosed in Figure 2 of Sawahata) all particles that impinge on the target structure (7) will generate conversion electrons that are detected by the detector (5). Therefore, Sawahata does not disclose the

feature that the electrostatic field generated by the electron detector is strongly localized and therefore provides the possibility to differentiate between conversion electrons emitted from different portions of the target structure. Also, the other prior art cited in the Office Action does not disclose an electron detector generating a strongly localized field that provides the possibility to differentiate between conversion electrons emitted from different portions of a target structure so that the invention as claimed in claim 46 also cannot be obvious in view of a combination of the cited prior art.

The new independent claim 47 is similar to cancelled claim 35 and is directed to a particle beam apparatus that includes a particular kind of detection system with a target structure having a near axis region consisting of material being strongly electron converting and a region remote from the optical axis consisting of a weakly electron converting material. In the Office Action, the Examiner has already acknowledged under item number 5 (with respect to former claims 17 and 35) that such a system is not disclosed or obvious in view of the combination of Sawahata with Todokoro, but only in further consideration of Honjo. However, in Honjo, the disclosure to which the Examiner has referred in the Office Action (Figures 34a) and b)) and the disclosure in column 23, line 66 to column 24, line 11) discusses the signal detected with an electron detector if the primary electron beam is swept across sample regions in which the sample material changes from a weakly electron converting material to a strongly electron converting material. This disclosure simply discusses how different contrasts or signal intensities are generated within a scanning electron microscope because of varying material properties of the sample. However, this has nothing to do with the design of a detector

system with which it is possible to differentiate between different types of particles emitted by a sample due to the irradiation of the sample by a primary particle beam.

To more clearly differentiate the system according to new independent claim 47, the feature has been amended that the detection system comprises a deflecting system with at least an electrostatic deflection field and a magnetic deflection field that are aligned perpendicular to each other and that the deflection system deflects particles emitted from the sample on varying regions of the target structure. These additional features clarify that the system of claim 47 does not refer to the generation of different signal intensities because of different materials in the sample, and differentiate between different particles emitted by the sample due to the irradiation of the sample by the primary beam.

Therefore, the argumentation by the Examiner with respect to new independent claim 47 as with respect to former claim 35 only can be maintained by applying impermissible hind-sight. Therefore, new independent claim 47 is new and inventive over the prior art.

A three-month extension of time in which to respond to the outstanding Office Action is hereby requested. PTO-2038 authorizing credit card payment for the amount of $1,020 is enclosed for the prescribed Large Entity three-month extension fee. If any other fees should be due by virtue of this filing, please charge deposit account 11-0665 for any ADDITIONAL fees. A duplicate of this page is enclosed for this purpose.

Wherefore, further consideration and allowance of the claims is hereby respectfully requested.

Respectfully submitted,

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I hereby certify this correspondence is being submitted to Commissioner for Patents, Alexandria, Virginia by facsimile transmission on July 10, 2005.

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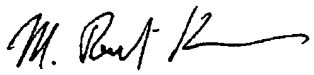

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